



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of:

Inventor: Goldsmith, Edward M., et al.

Serial No.: 09/929,299

Filed: 8/14/2001

For: Hockey Stick

)
) **Group Art Unit:** 3711

)
) **Examiner:** Graham, Mark S.

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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TRANSMITTAL OF APPEAL BRIEF

Applicants hereby enclose for filing an Appeal Brief (in triplicate) for the above referenced application.

The items checked below are appropriate:

☐ **"Small Entity Status"** of this application under 37 CFR 1.9 and 1.27 has been claimed.

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November 21, 2003
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LAI-2075344v1

Yolanda G. Ybuan
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Yolanda G. Ybuan
Signature of Person Mailing Paper

FEE FOR FILING A BRIEF IN SUPPORT OF AN APPEAL

Pursuant to 37 CFR 1.17(c), the fee for filing the Appeal Brief is:

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- ☒ Applicant(s) petitions for an extension of time under 37 CFR 1.136 [fees: 37 CFR 1.17(a)-(d)] for the total number of months checked below:

| EXTENSION (months) | FEE FOR SMALL ENTITY | FEE FOR OTHER THAN SMALL ENTITY |
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| <input type="checkbox"/> one month | \$55.00 | \$110.00 |
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- ☒ Charge Jones Day's Deposit Account No. **50-2468** in the amount of **\$750.00**.
- ☒ The Commissioner is authorized to charge Jones Day's Deposit Account No. **50-2468** for any fees required under 37 CFR §§ 1.16 and 1.17 that are not covered, in whole or in part, by a check enclosed herewith and to credit any overpayments to said Deposit Account **50-2468**.

Dated: November 21, 2003

555 West Fifth Street, Suite 4600
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Respectfully submitted,

JONES DAY

By: _____

Michael A. Tomasulo
Reg. No. 43,957



Patent
Prior Attorney Docket No. 266/247
Current Attorney Docket No.: 949797-100014

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Inventor: Goldsmith, Edward M., et al.

Serial No.: 09/929,299

Filed: 8/14/2001

For: Hockey Stick

Group Art Unit: 3711

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APPEAL BRIEF

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11/26/2003 JADD01 00000130 502468 09929299
01 FC:1252 420.00 DA
02 FC:1402 330.00 DA

Sir:

This brief is an appeal from the Final Office Action dated February 20, 2003, finally rejecting claims 1, 2 and 17-30. A Notice of Appeal was filed on July 21, 2003.

It is submitted that the application and claims are properly formed and the issues distilled and ripe for appeal.

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Patent
Prior Attorney Docket No. 266/247
Current Attorney Docket No.: 949797-100014

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventor: Goldsmith, Edward M., et al.

Serial No.: 09/929,299

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For: Hockey Stick

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I. REAL PARTY IN INTEREST.

The real party in interest is JAS D. EASTON, INC., the assignee of the present application as set forth in the assignment recorded at Reel 010779, Frame 0410.

II. RELATED APPEALS AND INTERFERENCES.

There are no related appeals or interferences.

III. STATUS OF CLAIMS.

Claims 1, 2 and 17-30 are currently pending in the present application. Claims 1 and 2 stand rejected under 35 U.S.C. § 102(b). Claims 1, 2, and 17-30 stand rejected under 35 U.S.C. § 103(a). Claims 1, 2, 23, and 24 are independent. Claims 1, 2 and 17-30 are under appeal.

IV. STATUS OF AMENDMENTS.

No amendments have been filed subsequent to the Final Office Action dated February 20, 2003.

V. SUMMARY OF INVENTION.

To place the invention in the proper context, a short discussion of the structure and utility of the present invention is believed to be in order. As the title of this invention aptly denotes, the invention here is a Hockey Stick. Most hockey sticks, including the hockey stick that is the subject of the present application, are comprised of a blade portion and a shaft or handle portion. More recently, the blade and shaft have been constructed in a manner that facilitates the user's replacement of the blade (i.e., the blades can be removably detached from the shaft and another blade can be attached and the removed blade can be attached to another shaft).

The blade portion is typically comprised of front and back faces, a hosel portion that extends longitudinally toward the shaft from the heel of the blade and a lower portion that extends generally

perpendicular relative to the hosel portion away from the heel. In conventional construction, the hosel portion of the blade employs a continuously uniform or a continuously gradually tapering cross-sectional geometry relative to and along its longitudinal axis moving from the upper portion of the hosel near the shaft toward the heel. This continuously uniform or continuously gradually tapering cross-sectional geometry relative to and along the longitudinal axis of the hosel results in a uniform or gradually tapering longitudinal bending stiffness in the hosel results.

Hockey players generally seek a hockey stick that has a "feel" that is comfortable yet provides the desired performance. This "feel" is a result of a myriad of factors including the type of materials employed in construction, the structure of the components, the dimensions of the components, the rigidity or bending stiffness of the shaft and blade, the weight and balance of the shaft and blade, the rigidity and strength of the joint(s) connecting the shaft to the blade, the curvature of the blade, etc. In order to modify the "feel" and/or performance of the hockey stick, the hosel portion of the blade can be uniquely modified in geometry and/or bending stiffness.

With reference to Figure 1, reproduced below along with Figures 3 and 4, the hockey stick of the present invention 10 has a longitudinally extending axis 40 that extends from the top section 50 of the shaft 20 through the bottom section 70 of the shaft 20 and through the upper portion 90 of the blade 30 generally toward the heel 80. The upper member 90 further comprises a defined region of reduced longitudinal bending stiffness 110 in the upper portion 90 of the blade 30. The stick has a reduction in longitudinal bending stiffness that gives it a higher flexibility about the axis line 200 in the direction of axis line 130. This reduction in longitudinal bending stiffness modifies the ability of the stick to flex in the general direction that extends away from the face 120 of the blade 30. The reduction of the bending stiffness is measured relative to the sections of the upper portion 90 of the

region of reduced longitudinal bending stiffness 110.



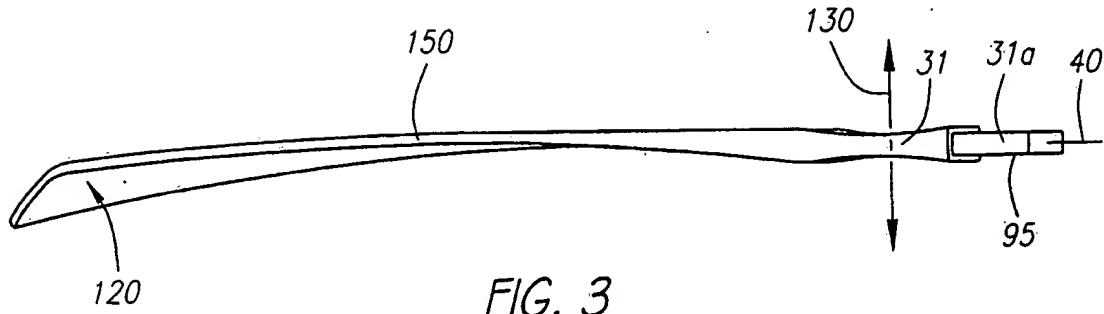


FIG. 3

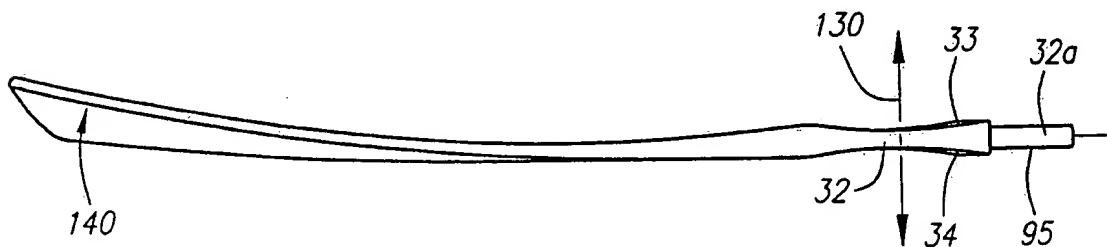


FIG. 4

The reduced longitudinal bending stiffness is achieved in the invention by modifying the geometry of the upper portion 90 of the blade 30. As seen in Figures 1, 3 and 4, the upper portion 90 of the blade 30 is configured such that at least one of the opposed walls 31 and 32 has an outer most exterior concave surface having a continuous curved transition such that the width formed by the opposed walls 31 and 32 of the upper portion 90 is reduced in the direction of the axis line 130. This reduction in width creates a region of reduced longitudinal bending stiffness in relation to the bordering regions on either side of the concave surface along the longitudinal axis.

The result is a hockey stick of unique configuration capable of exhibiting flex characteristics that allow a hockey player a comfortable "feel" while providing the player with the desired performance.

VI. ISSUES.

(a) Whether claims 1 and 2 are properly rejected under 35 U.S.C. § 102(b) as anticipated by Ilacqua;

(b) Whether claims 1, 2, 17-21 and 23-29 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Malmberg in view of Meumann;

(c) Whether claims 1, 2, 17-21 and 23-29 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Meumann in view of Malmberg;

(d) Whether claims 22 and 30 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Malmberg in view of Christian; and

(e) Whether claims 22 and 30 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Christian in view of Malmberg.

VII. GROUPING OF CLAIMS.

The following groups of claims do not stand or fall together with regard to the 35 U.S.C. § 103(a) rejections (VI. (b) & (c)) of claims 1, 2, 17-21 and 23-29:

- (1) Claims 1 and 2
- (2) Claims 17-21
- (3) Claims 23-29

The following groups of claims do not stand or fall together with regard to the 35 U.S.C. § 103(a) rejection of claims 22 and 30:

(1) Claim 22

(2) Claim 30

VIII. ARGUMENT.

I. Ilacqua Does Not Disclose or Otherwise Teach the Limitations of the Claims

The Final Office Action rejected claims 1 and 2 as being anticipated under 35 U.S.C. § 102(b) by Ilacqua, and in particular the regions identified in Ilacqua as 72 or 74. (May 21, 2002 Office Action p. 2). The examiner specifically stated:

"it is inherent that when material is removed from an area of stress such that there is less resistance than there otherwise would be that area will be more prone to bend and thus will be an area of 'reduced longitudinal bending stiffness' as required by the claims. The fact that the indentations are offset does not change this analysis."

(February 20, 2003 Office Action pp. 3-4). For the reasons set forth below, Applicants respectfully traverse these rejections.

A. Ilacqua Does Not Disclose or Otherwise Teach a Region of Reduced Longitudinal Bending Stiffness Relative to the Bordering Regions Located on Either Side

The Final Office Action rejected claims 1 and 2 as being anticipated by Ilacqua, noting that indentation regions 72 or 74 in Ilacqua meet the limitations of the claims. Claims 1 and 2 each include the limitation that the blade comprise:

"a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when

measured relative to regions in the upper portion ... that border either
side of the defined region along the longitudinal axis"

Thus, in the stick of the present invention, the blade has an area of reduced longitudinal bending stiffness as measured against the areas above and below the area of reduced longitudinal bending stiffness. In contrast, the hockey stick of Ilacqua has a gradual taper so that any given area is stiffer above and less stiff below. Thus, as explained in more detail below, Ilacqua contains no disclosure or teaching whatsoever pertaining to a "defined region of reduced longitudinal bending stiffness...relative to regions in the upper portion of the blade that border *either* side of the defined region along the longitudinal axis."

Ilacqua discloses a hockey stick 10 comprised of an elongated handle 12 and a blade member 14 having a shank 48 that is adapted to mate with the handle. The shank 48 is formed of two broad sidewalls 60, 62 that extend downward toward the heel 46 of the blade 14 to form two tapering sidewalls 56, 58. (See Ilacqua at Figures 1 and 2 and related text). The regions 72 and 74, identified as indentations in the Final Office Action, comprise a series of generally rectangular *alternating* indentations in the tapering sidewalls 56, 58. Notably, the indentations are *offset* relative to one another, such that indentations 72 in tapering sidewall 56 occupies the space *between* successive indentations 74 residing in tapering sidewall 58.

Contrary to the examiner's conclusion that "[t]he fact that the indentations are offset does not change this analysis," (See February 20, 2003 Office Action pp. 3-4) the fact that the indentations alternate and offset has great bearing on the analysis. Because indentations 72 and 74 alternate and offset, the width dimension of the shank 48, measured between the base of the indentations 72 and 74 and their respective opposing tapering sidewalls 56 and 58, only varies with the tapering of the

sidewalls. Accordingly, the width dimension does not increase but *only* decreases with the taper along the longitudinal axis of the shank 48. Hence, Ilacqua only discloses an increase in the relevant thickness dimension going up the shaft 48 and not an increased thickness at the regions bordering above *and below* indentations 72 or 74. (See Ilacqua at Figures 1 and 2; Col. 4:54 to Col. 5: 15).

Consequently, the only bending stiffness attribute that can be inferred from this structure is that the bending stiffness in the region of the shank bordering *above* any given indentation 72 or 74 is greater than the bending stiffness in the region of the shank 48 at the indentation 72, 74 and the bending stiffness in the region of the shank 48 bordering *below* any given indentation 72 or 74 is less than the bending stiffness in the region of the shank at the indentation 72, 74. Ilacqua, therefore, does not disclose any structure that teaches or otherwise suggests the employment of a defined region of reduced longitudinal bending stiffness relative to the bordering regions on **either** side of the defined region along the longitudinal axis as required by claims 1 and 2. In citing Ilacqua, the examiner in the Final Office Action incorrectly broadened the region to be one of reduced longitudinal bending stiffness instead of a "defined region of reduced longitudinal bending stiffness...relative to regions in the upper portion ... that border either side of the defined region along the longitudinal axis".

Furthermore, the placement and dimensioning of the indentations 72, 74 along the tapered walls 56, 58 evidences that Ilacqua takes great measures to maintain the traditional tapered structure toward the heel 46 of the blade 14 - and therefore takes great measures to maintain the traditional continuous reduction of bending stiffness along the longitudinal length of the shaft or shank toward the heel of the blade. That Ilacqua maintains this traditional configuration is not surprising, in that it is consistent with the fact that Ilacqua teaches a shank 48 molded of a material that is generally

heavier (i.e., having a greater specific gravity) than wood such as plastic. The indentations 72, 74 lessen the weight so that it may better approximate the weight and feel of a wooden hockey stick handle. (See Ilacqua Col. 1:64-67; Col. 5:16-19). Consequently, not only does Ilacqua fail to teach the limitation but it also appears to place a premium on the retention of the traditional wood stick configuration and thereby *teaches away* from the claimed limitation.

Although Ilacqua teaches indentations in the shank of a molded blade member, when reviewed carefully the relative positions of those indentations negate its relevance to the claimed limitations and when further viewed with reference to the structural configurations of the embodiments and the manufacturing materials disclosed not only fails to disclose the limitation but in fact *teaches away* from the claimed limitations. Accordingly, it is respectfully submitted that claims 1 and 2 are allowable over Ilacqua.

II. Neither Malmberg in View of Meumann Nor Meumann in View of Malmberg Discloses or Otherwise Teaches the Limitations of the Claims

The Final Office Action rejected claims 1, 2, 17-21 and 23-29 under 35 U.S.C. § 103(a) as being unpatentable over Malmberg in view of Meumann and Meumann in view of Malmberg noting that:

"Malmberg discloses the claimed structure with the exception of the detachable feature of the blade. However, as disclosed by Meumann it is known in the art to provide hockey stick blades as detachable blades. It would have been obvious to one of ordinary skill in the art to have done the same with Malmberg's blade to allow for replacement thereof." (February 20, 2003 Office Action at p. 2).

"Meumann discloses the claimed structure with the exception of the concave area of the blade. However, as disclosed by Malmberg it is known in the art to provide a weakened area at what would be the upper portion of Meumann's detachable blade. It would have been obvious to one of ordinary skill in the art to have done the same with the upper portion of Meumann's blade to allow for flexibility at that location." (February 20, 2003 Office Action at p. 3).

Applicants respectfully traverse these rejections as set forth below.

A. Claims 17-21 and 23-29 Are Not Obvious -- Malmberg Does Not Teach an *Outer* or an *Outer Most Exterior Concave Surface* Nor Does Malmberg Disclose or Otherwise Teach a Reduced Width Dimension Relative to the Bordering Regions Located on Either Side

The Final Office Action rejected claims 17-21 and 23-29 as obvious over Malmberg in view of Meumann, finding that Malmberg disclosed the claimed structure *except* for the detachable feature of the blade. The Final Office Action also rejected claims 17-21 and 23-29 as obvious over Meumann in view of Malmberg, finding that Malmberg discloses that it is known in the art to provide a weakened area at what would be the upper portion of Meumann's detachable blade. Because Malmberg does not disclose or otherwise suggest an *outer most exterior* concave surface as claimed, Applicants respectfully traverse the rejection of claims 17-21 and 23-29.

Claims 17-21 and 23-29 each require that the upper portion of the blade comprise:

"an outer most exterior concave surface having a continuous curved transition into at least one of the first or second outer most exterior surfaces [of the blade]".

Malmberg does not disclose an *outer most exterior concave* surface as is required by the above limitation in claims 17-21 and 23-29. Rather, Malmberg discloses a one-piece hockey stick having a shaft and a blade. The shaft includes a concave *internal* structure that is encased in a non-concave "reinforcement device 4" which stiffens the weakened shaft (created by the concave internal structure) when deflected a small amount so as to avoid breakage of the shaft. (Malmberg translation pp. 1-2).

The examiner in the Final Office Action incorrectly characterizes the hockey stick in Malmberg. Malmberg discloses a hockey stick that is comprised of a shaft encased by a reinforcement device, not a hockey stick separate from an "irrelevant" reinforcement device. The examiner's contention is contrary to Malmberg's express disclosure, which negates the notion that the reinforcement device and hockey stick are separate from one another:

According to the embodiment shown in the drawing, the reinforcement device consists of a case or the like attached on the shaft 1 over the relatively weakly dimensioned part 3, which case is, at its first end 6, firmly attached to the shaft 1 and which, at its other end 7, is located some distance from the shaft 1. **The case 4 is arranged such that it is slipped over the shaft 1 before the blade 2 is glued or otherwise attached to the shaft 1.** (Malmberg translation at p.2, ¶ 7 (emphasis added)).

Hence, Malmberg does not support the contention that the hockey stick with the particular weakened dimension disclosed in Malmberg exists separate from the reinforcement device. Malmberg teaches a concave *internal* surface on a *shaft* (not a blade) that is permanently encased by

the reinforcement device prior to being attached to the blade. Because it is clear from the drawings that the outer surface of the reinforcement device forming the outer exterior of the shaft is not concave, Malmberg fails to disclose the limitations of the claims. (See Malmberg Figures 1-3).

In addition to the limitation discussed above, claims 23-29 also include the limitation that the upper portion of the blade comprise an outer most exterior concave surface that:

"forms a region of reduced width dimension, as measured between the first and second outer most exterior surfaces, relative to bordering regions on either side of the concave surface along the longitudinal axis."

Because Malmberg does not teach an outer most exterior concave surface as discussed above, it follows that Malmberg does not teach such a surface that forms a reduced width dimension as measured between the outer most exterior surfaces, relative to bordering regions on either side of the concave surface along the longitudinal axis as is required by claims 23-29.

Accordingly, it is respectfully submitted that claims 17-21 and 23-29 are allowable over Malmberg.

B. Claims 1, 2 and 17-21 Are Not Obvious - - Malmberg Does Not Teach a Defined Region of Reduced Longitudinal Bending Stiffness Relative to the Bordering Regions Located on Either Side

The Final Office Action rejected claims 1, 2, and 17-21 as obvious over Malmberg in view of Meumann, finding that Malmberg disclosed the claimed structure except for the detachable feature of the blade, and as obvious over Meumann in view of Malmberg, finding that Malmberg discloses that it is known in the art to provide a weakened area at what would be the upper portion of Meumann's detachable blade. Because Malmberg does not disclose a defined region of reduced

longitudinal bending stiffness relative to the bordering regions located on either side, Applicants respectfully traverse the rejection of claims 1, 2 and 17-21.

Claims 1, 2 and 17-21 each require that the upper portion of the blade comprise:

"a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when measured relative to regions in the upper portion ... that border either side of the defined region along the longitudinal axis".

Malmberg does not disclose a defined region of reduced longitudinal bending stiffness as is required by the above limitation in claims 1, 2 and 17-21. Rather, Malmberg discloses a hockey stick having a shaft that is overlain with a reinforcement device 4 which stiffens the shaft to avoid breakage. (Malmberg translation pp. 1-2). Specifically, the reinforcement device 4 adds stiffness to the weakened area 3 of the shaft to eliminate the disadvantage of breakage. (Malmberg translation pp. 1-2). Therefore, by adding stiffness, Malmberg does not disclose a defined region of reduced longitudinal bending stiffness as required by the claims.

Accordingly, it is respectfully submitted that claims 1, 2 and 17-21 are allowable over Malmberg.

C. Malmberg In View of Meumann Does Not Teach a Detachable Blade That Meets the Limitations of the Claims

As previously noted, the Final Office Action rejected claims 1, 2, 17-21 and 23-29 as obvious over Malmberg in view of Meumann, finding that Malmberg disclosed the claimed structure except for the detachable feature of the blade, and as obvious over Meumann in view of Malmberg, finding that Malmberg discloses that it is known in the art to provide a weakened area at what would be the

upper portion of Meumann's detachable blade. Because it would be counterintuitive to combine the detachable feature employed in Meumann with the internal concave structure disclosed in Malmberg, Applicants respectfully traverse.

Claims 17-21 and 23-29 each included the limitation of a *detachable* blade having an upper portion that includes:

"an outer most exterior concave surface having a continuous curved transition into at least one of the first or second out most exterior surfaces [of the blade]".

Claims 1, 2 and 17-21 each require that the upper portion of the blade comprise:

"a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when measured relative to regions in the upper portion ... that border either side of the defined region along the longitudinal axis".

As set forth in sections II.A and II B., Malmberg does not disclose these limitations. Consequently, Malmberg in combination with Meumann cannot render these claims obvious under 35 U.S.C. §103(a) because the references cited do not teach or suggest *all* the claim limitations -- hence no *prima facie* case of obviousness can be made. (M.P.E.P. at §§2143 and 2143.03).

Furthermore, there is no motivation to combine the detachable feature employed in Meumann with the internal concave structure disclosed in Malmberg, let alone to combine these two features in the manner suggested in the Final Office Action -- namely to locate the internal concave structure of Malmberg's part 5 externally on the hosel portion of the detachable blade disclosed in Meumann.

The Final Office Action suggests that because Malmberg discloses a single piece hockey stick having a weakened part 3 connecting the blade 2 with the shaft 1 and Meumann discloses a detachable blade having a hosel, one of ordinary skill in the art would find it obvious to combine those teachings to produce a detachable blade having a hosel portion that includes Malmberg's weakened part 3 without the "reinforcement device 4." This reasoning however fails to recognize that a single unitary stick is quite different than a multi-part stick comprising a detachable blade.

Hockey sticks, whether unitary or multi-part, typically include a tapered section that connects the shaft to the blade, thereby facilitating the seamless transition in merging a thick shaft into a thin blade. The prevalence of this traditional structure is evidenced by the art made of record including the Meumann reference. (See Meumann at Figures 6-7).

As explained in Meumann, because of this tapered configuration hockey sticks tend to break at the lower shaft portion immediately above the blade:

During the course of a game, a hockey stick can impact the playing surface hundreds of times, often at force levels equal to the maximum level for which the stick was designed. Hence, it is not uncommon for experienced players to break one or more sticks during each game. *In many cases, a hockey stick breaks at the hosel portion of the blade (the lower shaft portion immediately above the blade), thus leaving the majority of the shaft undamaged.*

(Meumann at Col. 1:19-28 (emphasis added)).

The blade replacement system disclosed in Meumann is directed to enhancing the useful life of a hockey stick shaft by eliminating the need to discard the entire stick due to a broken blade. To

this end, Meumann discloses a coupler portion 12 configured to fit between a replacement blade 14 and a hockey stick shaft 16 - thereby allowing players to attach new blades onto previously broken sticks to preserve the life of the shaft. (Meumann at Col. 2:23-26; Col. 2:40-45). Because Meumann teaches that the hosel portion of the blade is the portion that tends to break, it would be contrary to the teachings of Meumann to weaken that very same hosel by including Malmberg's weakened part 3 thereon. Thus, Meumann expressly *teaches away* from a detachable blade having a hosel or upper portion that includes Malmberg's weakened part 3.

The combination suggested in the Final Office Action is counterintuitive for an additional reason. Meumann teaches the conservation of shafts by recycling them via the use of a coupler portion 12. Thus, in order to achieve the greatest conservation of shaft material, Meumann implicitly teaches a hosel or upper portion of blade that is no longer than necessary to provide the structural support or integrity to connect the thin blade to the thicker shaft -- thereby conserving the greatest portion of the shaft for reuse:

It is contemplated that when a wooden hockey stick breaks close to the hosel of the stick, that the shaft be cleanly cut just above the break to provide a "squared off" connecting end 42, as shown in phantom in Fig. 1. That shaft connecting end 42 may then be inserted into opening 22 of coupler portion 12 as shown to snugly fit therewithin. While it is possible that the remaining broken blade may be refinished to create a hosel for insertion into opposing opening 24 of coupler portion 12, it is more likely that the user must discard the broken blade as unusable. Under those circumstances, the user can employ a

replaceable blade having a finished hosel 44, shown in phantom in FIG. 1 and directly in FIG. 6, that is capable of mating with opposing opening 24 for a snug fit therewithin.

(Meumann at Col. 4:63 - Col. 5:10 (emphasis added)). Hence, weakening the hosel's structural integrity by including thereon Malmberg's part 3 would be contrary to its primary purpose -- that of providing the necessary support to connect the blade to the shaft -- and therefore would be counterintuitive as well as wasteful in view of the teachings in Meumann.

The foregoing teaching in Meumann is also consistent with the general proposition that the connection point between the shaft and the blade, in a multi-part stick, be located as close as possible to the blade. In this way the player's force on the shaft may be transferred, without interruption or impedance created by the connection, as close as possible to the point of impact (i.e., the blade face) -- thereby providing greater control to the player. In contrast, the addition of a weakened section, such as that disclosed in Malmberg, in the hosel would tend to displace the connection point from the blade a greater distance than otherwise required to provide the necessary structural support to make a connection with the shaft. Hence, such a design would not be obvious for this additional reason.

Thus, because Malmberg does not disclose or otherwise teach the concave surface limitation for which it was cited, its combination with Meumann is insufficient to make out a *prima facie* case of obviousness. In addition, neither Malmberg nor Meumann provide any motivation to combine the elements as suggested by the Final Office Action, and in fact *teach away* from such a combination.

Lack of motivation to do so is further evidenced by Malmberg, which states that the weakly dimensioned part 3 created by the concave regions 5 has the disadvantage that the shaft will break

without the external stiffening member. (See Malmberg translation at p. 1 ¶ 1). Moreover, as previously noted, the concave regions 5 in Malmberg are located on the shaft and not the blade even though the hockey stick in Malmberg was formed with a blade having a hosel extending from the heel of the blade. (See Malmberg Figure 3, reference numeral 2 and translation at p. 2 ¶ 6). Hence, for all the foregoing reasons it would not have been obvious to combine the teachings of Malmberg with Meumann so as to locate the internal concave structure of Malmberg's region 5 externally on the hosel portion of the detachable blade disclosed in Meumann.

Since claims 1, 2, 17-21 and 23-29 include the limitation that the blade be detachable, it is respectfully submitted that they are allowable over Malmberg and Meumann.

D. Malmberg Does Not Teach or Otherwise Suggest a Concave Surface Having a Continuous Curved Transition

As set forth in the foregoing sections, claims 17-21 and 23-29 each include an upper portion of a blade comprising an:

"outer most exterior concave surface having a continuous curved transition into at least one of the first or second outer most exterior surfaces [of the blade]".

Because Malmberg, as previously set forth in the section II.A, does not disclose an outer most exterior concave surface it follows that such a surface cannot have a continuous curved transition into the outer most exterior surfaces of the blade as is required by claims 17-21 and 23-29.

Accordingly, for the same reasons set forth in the preceding section II.A, it is respectfully submitted that claims 17-21 and 23-29 are allowable over Malmberg on this alternative additional basis.

III. Neither Malmberg in View of Christian Nor Christian in View of Malmberg Discloses or Otherwise Teaches the Limitations of the Claims

The Final Office Action rejected claims 22 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Malmberg in view of Christian and Christian in view of Malmberg noting that:

"Malmberg discloses the claimed structure with the exception of the detachable feature of the blade and its fiber layers. However, as disclosed by Christian it is known in the art to provide hockey stick blades as detachable blades with fiber reinforcement. It would have been obvious to one of ordinary skill in the art to have done the same with Malmberg's blade to allow for replacement thereof and to make the blade stronger." (February 20, 2003 Office Action pp. 2-3).

"Christian discloses the claimed structure with the exception of the concave area of the blade. However, as disclosed by Malmberg it is known in the art to provide a weakened area at what would be the upper portion of Christian's detachable blade. It would have been obvious to one of ordinary skill in the art to have done the same with at the upper portion of Christian's blade to allow for flexibility at that location." (February 20, 2003 Office Action p. 3).

Applicants respectfully traverse these rejections as set forth below.

A. Malmberg Does Not Teach an *Outer* or an *Outer Most Exterior Concave Surface* Nor Does Malmberg Disclose or Otherwise Teach a Reduced Width Dimension Relative to the Bordering Regions Located on Either Side

The Final Office Action rejected claims 22 and 30 as obvious over Malmberg in view of Christian, finding that Malmberg disclosed the claimed structure *except* for the detachable feature of the blade and its fiber layers. The Final Office Action also rejected claims 22 and 30 as obvious over Christian in view of Malmberg, finding that Malmberg discloses that it is known in the art to provide a weakened area at what would be the upper portion of Christian's detachable blade. Because Malmberg does not disclose an *outer most exterior* concave surface as claimed, Applicants, as done in section II.A, respectfully traverse the rejection of claim 30.

As in claims 17-21 and 23-29, claim 30 requires that the upper portion of the blade comprise:

"an outer most exterior concave surface having a continuous curved transition into at least one of the first or second out most exterior surfaces [of the blade]".

As discussed in section II.A, Malmberg does not disclose an *outer most exterior* concave surface as is required by the above limitation. Rather, Malmberg discloses a hockey stick having a shaft comprising a concave *internal* structure that is overlain with a reinforcement device 4 which stiffens the weakened shaft (created by the concave internal structure) when deflected a small amount so as to avoid breakage of the shaft. (Malmberg translation pp. 1-2). Therefore, as discussed in section II.A, the outer exterior of Malmberg's shaft is not concave and, accordingly, Malmberg fails to disclose the limitations of claim 30.

In addition to the limitation discussed above, claim 30 also includes the limitation that the upper portion of the blade comprise an outer most exterior concave surface that:

"forms a region of reduced width dimension, as measured between the first and second outer most exterior surfaces, relative to bordering regions on either side of the concave surface along the longitudinal axis."

Because Malmberg does not teach an outer most exterior concave surface as discussed above, it follows that Malmberg does not teach such a surface that forms a reduced width dimension as measured between the outer most exterior surfaces, relative to bordering regions on either side of the concave surface along the longitudinal axis as is required by claim 30.

Accordingly, it is respectfully submitted that claim 30 is allowable over Malmberg.

B. Malmberg Does Not Teach a Defined Region of Reduced Longitudinal Bending Stiffness Relative to the Bordering Regions Located on Either Side

As previously noted, the Final Office Action rejected claims 22 and 30 as obvious over Malmberg in view of Christian, finding that Malmberg disclosed the claimed structure *except* for the detachable feature of the blade and its fiber layers, and as obvious over Christian in view of Malmberg, finding that Malmberg discloses that it is known in the art to provide a weakened area at what would be the upper portion of Christian's detachable blade. Because Malmberg does not disclose a defined region of reduced longitudinal bending stiffness as claimed, Applicants, as done in section II.B, respectfully traverse the rejection of claim 22.

As in claims 1, 2, and 17-21, claim 22 requires that the upper portion of the blade comprise:

"a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when

measured relative to regions in the upper portion ... that border either side of the defined region along the longitudinal axis."

As discussed in section II.B, Malmberg does not disclose a defined region of longitudinal bending stiffness as is required by the above limitation. Rather, Malmberg discloses a hockey stick having a shaft that is overlain with a reinforcement device 4 which stiffens the shaft to avoid breakage. (Malmberg translation pp. 1-2). Therefore, as discussed in section II.B, Malmberg fails to disclose the limitations of claim 22.

Accordingly, it is respectfully submitted that claim 22 is allowable over Malmberg.

C. Malmberg In View of Christian Does Not Teach a Detachable Blade That Meets the Limitations of the Claims

As previously noted, the Final Office Action rejected claims 22 and 30 as obvious over Malmberg in view of Christian, finding that Malmberg disclosed the claimed structure *except* for the detachable feature of the blade and its fiber layers, and obvious over Christian in view of Malmberg, finding that Malmberg discloses that it is known in the art to provide a weakened area at what would be the upper portion of Christian's detachable blade. Because it would be counterintuitive to combine the detachable feature employed in Christian with the internal concave structure disclosed in Malmberg, Applicants respectfully traverse.

Claim 30 includes the limitation of a *detachable* blade having an upper portion that includes:

"an outer most exterior concave surface having a continuous curved transition into at least one of the first or second out most exterior surfaces [of the blade]".

Claim 22 includes the limitation of a detachable blade having an upper portion that includes:

"a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when measured relative to regions in the upper portion ... that border either side of the defined region along the longitudinal axis".

As set forth in sections II.A and III.A, and II.B and III.B, Malmberg does not disclose these limitations. Consequently, Malmberg in combination with Christian cannot render these claims obvious under 35 U.S.C. §103(a) because the references cited do not teach or suggest *all* the claim limitations -- hence no *prima facie* case of obviousness can be made. (M.P.E.P. at §§2143 and 2143.03).

Furthermore, there is no motivation to combine the detachable feature employed in Christian with the internal concave structure disclosed in Malmberg, let alone to combine these two features in the manner suggested in the Final Office Action -- namely to locate the internal concave structure of Malmberg's part 5 externally on the shaft portion or connection end of the detachable blade disclosed in Christian.

The Final Office Action suggests that because Malmberg discloses a single piece hockey stick having a weakened part 3 connecting the blade 2 with the shaft 1 and Christian discloses a detachable blade having a shaft portion 14 and a connection end 15, one of ordinary skill in the art would find it obvious to combine those teachings to produce a detachable blade having a shaft portion or connection end that includes Malmberg's weakened part 3. This reasoning however fails to recognize that a single unitary stick is quite different than a multi-part stick comprising a detachable blade.

As already discussed in section II.C, hockey sticks, whether unitary or multi-part, typically include a tapered section that connects the shaft to the blade, thereby facilitating the seamless transition in merging a thick shaft into a thin blade. As explained in Christian, because of the narrow dimensioning required for hockey sticks having detachable blades, the tapered configuration hockey stick with detachable blade tends to break at or near where the shaft and the blade connect:

"[T]here is a tendency for the connection end of the accompanying replacement blade to break at or near the point at which it is secured to the lower end of the handle. This tendency to break is due in large measure to ... a narrowing of connection end dimensions to enable its insertion into the handle...Experience has shown that the weak point of the replacement blade is the point at which the blade joins the lower end of the handle."

(Christian at Col. 1:58-65).

The hockey stick blade disclosed in Christian is directed to enhancing the useful life of a hockey stick by reinforcing the connection end of the blade to limit breakage at the point of connection with the handle. To this end, Christian discloses a connection end 15 that is covered by reinforcement material 21 "to provide strength and durability to this critical part of the replacement blade 30". (Christian at Col. 4:14-17). Because Christian teaches that the area around the connection end of the blade is the portion that tends to break, the very area that Christian seeks to reinforce, it would be contrary to the teachings of Christian to weaken that area by including Malmberg's weakened part 3 thereon. Thus, Christian expressly *teaches away* from a detachable blade having an upper portion that includes Malmberg's weakened part 3.

Thus, because Malmberg neither discloses the concave surface limitation nor the defined region of reduced longitudinal bending stiffness for which it was cited, its combination with Christian is insufficient to make out a *prima facie* case of obviousness. In addition, neither Malmberg nor Christian provide any motivation to combine the elements as suggested by the Final Office Action, and in fact *teach away* from such a combination.

Lack of motivation to do so is further evidenced by Malmberg, which states that the weakly dimensioned part 3 created by the concave regions 5 has the disadvantage that the shaft will break without the external stiffening member. (See Malmberg translation at p. 1 ¶ 1). Moreover, as previously noted, the concave regions 5 in Malmberg are located on the shaft and not the blade even though the hockey stick in Malmberg was formed with a blade having a hosel extending from the heel of the blade. (See Malmberg Figure 3, reference numeral 2 and translation at p. 2 ¶ 6). Hence, for all the foregoing reasons it would not have been obvious to combine the teachings of Malmberg with Christian so as to locate the internal concave structure of Malmberg's region 5 externally on or around the connection end of the detachable blade disclosed in Christian.

Accordingly, it is respectfully submitted that claims 22 and 30 are allowable over Malmberg and Christian.

D. Malmberg Does Not Teach or Otherwise Suggest a Concave Surface Having a Continuous Curved Transition

As set forth with regard to claims 17-21 and 23-29 in the foregoing sections, claim 30 includes an upper portion of a blade comprising an:

"outer most exterior concave surface having a continuous curved transition into at least one of the first or second outer most exterior surfaces [of the blade]".

Because Malmberg, as previously set forth in the sections II.A and III.A, does not disclose an outer most exterior concave surface it follows that such a surface cannot have a continuous curved transition into the outer most exterior surfaces of the blade as is required by claim 30.

Accordingly, for the same reasons set forth in the preceding sections II.A and III.A, it is respectfully submitted that claim 30 is allowable over Malmberg on this alternative additional basis.

SUMMARY

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance. If such is not the case, the Examiner is requested to kindly contact the undersigned in an effort to satisfactorily conclude the prosecution of the application.

Respectfully submitted,

JONES DAY

Dated: November 21, 2003

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APPENDIX OF THE PENDING CLAIMS

1. A hockey stick blade comprising:

a lower portion extending from a toe section to a heel section to form a front and a back face of the blade; and

an upper portion having a longitudinal axis and comprising a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when measured relative to regions in the upper portion that border either side of the defined region along the longitudinal axis;

wherein the upper portion is configured to be detachably mated to a hockey stick shaft.

2. A hockey stick comprising:

a shaft and

a blade adapted to being detachably joined to the shaft comprising [a face,]:

a lower portion extending from a toe section to a heel section to form a front and a back face of the blade; and

an upper portion having a longitudinal axis generally extending from the heel toward the shaft, the upper portion being comprised of a defined region of reduced longitudinal bending stiffness in a direction generally perpendicular to the faces of the blade when measured relative to regions in the upper portion of the blade that border either side of the defined region along the longitudinal axis.

17. The hockey stick blade of claim 1, wherein the upper portion further comprises a front side generally facing in the same direction as the front face of the blade and forming a first outer most exterior surface of the blade and a back side generally facing in the same direction as the back face of the blade and forming a second outer most exterior surface of the blade; and

wherein the defined region of reduced longitudinal bending stiffness comprises an outer most exterior concave surface having a continuous curved transition into at least one of the first or second outer most exterior surfaces.

18. The hockey stick blade of claim 17, wherein the defined region of reduced longitudinal bending stiffness comprises an outer most exterior concave surface having a continuous curved transition into the first outer most exterior surface.

19. The hockey stick blade of claim 17, wherein the defined region of reduced longitudinal bending stiffness comprises an outer most exterior concave surface having a continuous curved transition into the second outer most exterior surface.

20. The hockey stick blade of claim 17, wherein the defined region of reduced longitudinal bending stiffness comprises a first outer most exterior concave surface having a continuous curved transition into the first outer most exterior surface and a second outer most exterior concave region having a continuous curved transition into the second outer most exterior surface.

21. The hockey stick blade of claim 20, wherein the first and second outer most exterior concave surfaces are directly opposed to one another.

22. The hockey stick blade of claim 1, wherein the blade is comprised of one or more inner core elements overlain with one or more layers of continuous fibers disposed in a hardened matrix material.

23. A hockey blade configured to be detachably mated to a hockey shaft comprising:

- (a) a lower portion extending from a toe section to a heel section to form a front and a back face of the blade; and
- (b) an upper portion having a longitudinal axis extending from the heel section toward a mating section adapted to be detachably mated to a shaft; the upper portion comprising: a front side having a first outer most exterior surface generally facing in the same direction as the front face of the blade; a back side having a second outer most exterior surface generally facing in the same direction as the back face of the blade; and an outer most exterior concave surface having a continuous curved transition into at least one of the first or second outer most exterior surfaces, wherein the concave surface forms a region of reduced width dimension, as measured between the first and second outer most exterior surfaces, relative to bordering regions on either side of the concave surface along the longitudinal axis.

24. A two piece hockey stick comprising:

- (a) a shaft, and

(b) a blade configured to be detachably mated to the shaft, said blade comprising:

(i) a lower portion extending from a toe section to a heel section to form a front and a back face of the blade; and

(ii) an upper portion, having a longitudinal axis generally extending from the heel toward the shaft, comprising: a front side having a first outer most exterior surface generally facing in the same direction as the front face of the blade; a back side having a second outer most exterior surface generally facing in the same direction as the back face of the blade; and an outer most exterior concave surface having a continuous curved transition into at least one of the first or second outer most exterior surfaces, wherein the concave surface forms a region of reduced width dimension, as measured between the first and second outer most exterior surfaces, relative to bordering regions on either side of the concave surface along the longitudinal axis.

25. The hockey stick of claim 24, wherein the outer most exterior concave surface transitions into the first outer most exterior surface.

26. The hockey stick of claim 24, wherein the outer most exterior concave surface transitions into the second outer most exterior surface.

27. The hockey stick of claim 24 further comprising a first outer most exterior concave surface having a continuous curved transition into the first outer most exterior surface and a second outer most exterior concave surface having a continuous curved transition into the second outer most exterior surface.

28. The hockey stick of claim 27, wherein the first and second outer most exterior concave surfaces are directly opposed to one another.

29. The hockey stick of claim 27, wherein the first and second outer most exterior concave surfaces have substantially the same curvature and dimensions.

30. The hockey stick of claim 24, wherein the blade is comprised of one or more inner core elements overlain with one or more layers of continuous fibers disposed in a hardened matrix material.